

WHAT IS CLAIMED IS:

1. A system for controlling an automatic transmission, comprising:
 - a source of a line pressure;
 - an oil-temperature sensor which senses a temperature of a transmission oil;
 - 5 an engine-speed sensor which senses an engine speed;
 - a hydraulic-pressure sensing device which senses an actual value of the line pressure;
 - a control circuit which controls the line pressure; and
 - a control unit which controls the control circuit, the control unit being configured
- 10 to:
 - determine that engine cranking starts when the engine speed is greater than a predetermined speed;
 - set as a low-pressure control set time a time required from start of engine cranking to completion of an overshoot of the line pressure due to increase in the
 - 15 engine speed;
 - determine that the actual value of the line pressure is equal to or greater than a predetermined value;
 - determine that the actual value as determined is held for a period longer than the low-pressure control set time; and
 - 20 provide first and second indicated values of the line pressure to the control circuit when the transmission-oil temperature at engine start is equal to or smaller than a predetermined temperature,
 - the first indicated value being smaller than the second indicated value,
 - the first indicated value being provided when at least a range other than a drive
 - 25 range is selected,
 - the second indicated value being provided when the drive range is selected, the second indicated value being provided when it is determined that the actual value of the line pressure is equal to or greater than the predetermined value, and when it is determined that the actual value as determined is held for the period longer than the

low-pressure control set time.

2. The system as claimed in claim 1, the transmission comprising a V-belt type CVT including a V-belt and primary and secondary pulleys holding the V-belt, the system
5 further comprising:

a first valve which controls a primary pressure of the primary pulley;

a second valve which controls a secondary pressure of the secondary pulley;

a third valve which controls the line pressure to be supplied to the first and
second valves; and

10 a hydraulic-pressure sensor which senses an actual value of the secondary pressure,

wherein the hydraulic-pressure sensing device comprises the hydraulic-pressure sensor.

15 3. The system as claimed in claim 1, wherein the control unit is further configured to:

determine that the hydraulic-pressure sensing device fails; and

determine that a first set time elapses after it is determined that engine cranking
starts,

20 wherein when it is determined that the hydraulic-pressure sensing device fails, and when it is determined that the first set time elapses, the second indicated value of the line pressure is provided to the control circuit.

4. The system as claimed in claim 1, wherein the control unit is further configured
25 to provide a maximum indicated value of the line pressure to an engagement element when it is determined that the actual value of the line pressure is equal to or greater than the predetermined value after the second indicated value of the line pressure is provided to the control circuit.

5. The system as claimed in claim 4, wherein the control unit is further configured to determine that a second set time elapses after the second indicated value of the line pressure is provided to the control circuit,

wherein the maximum indicated value of the line pressure is provided when it is
5 determined that the second set time elapses.

6. A system for controlling an automatic transmission, comprising:

means for producing a line pressure;

means for sensing a temperature of a transmission oil;

10 means for sensing an engine speed;

means for sensing an actual value of the line pressure;

a control circuit which controls the line pressure; and

means for controlling the control circuit, the controlling means being configured

to:

15 determine that engine cranking starts when the engine speed is greater than a predetermined speed;

set as a low-pressure control set time a time required from start of engine cranking to completion of an overshoot of the line pressure due to increase in the engine speed;

20 determine that the actual value of the line pressure is equal to or greater than a predetermined value;

determine that the actual value as determined is held for a period longer than the low-pressure control set time; and

25 provide first and second indicated values of the line pressure to the control circuit when the transmission-oil temperature at engine start is equal to or smaller than a predetermined temperature,

the first indicated value being smaller than the second indicated value,

the first indicated value being provided when at least a range other than a drive range is selected,

the second indicated value being provided when the drive range is selected, the second indicated value being provided when it is determined that the actual value of the line pressure is equal to or greater than the predetermined value, and when it is determined that the actual value as determined is held for the period longer than the
5 low-pressure control set time.

7. A method of controlling an automatic transmission, the transmission comprising:
a source of a line pressure;
an oil-temperature sensor which senses a temperature of a transmission oil;
10 an engine-speed sensor which senses an engine speed;
a hydraulic-pressure sensing device which senses an actual value of the line pressure; and
a control circuit which controls the line pressure,
the method comprising:
15 determining that engine cranking starts when the engine speed is greater than a predetermined speed;
setting as a low-pressure control set time a time required from start of engine cranking to completion of an overshoot of the line pressure due to increase in the engine speed;
20 determining that the actual value of the line pressure is equal to or greater than a predetermined value;
determining that the actual value as determined is held for a period longer than the low-pressure control set time; and
providing first and second indicated values of the line pressure to the control
25 circuit when the transmission-oil temperature at engine start is equal to or smaller than a predetermined temperature,
the first indicated value being smaller than the second indicated value,
the first indicated value being provided when at least a range other than a drive range is selected,

the second indicated value being provided when the drive range is selected, the second indicated value being provided when it is determined that the actual value of the line pressure is equal to or greater than the predetermined value, and when it is determined that the determination of the actual value continues for the period longer than
5 the low-pressure control set time.

8. The method as claimed in claim 7, the transmission comprising a V-belt type CVT including a V-belt and primary and secondary pulleys holding the V-belt, the method being carried out with:

- 10 a first valve which controls a primary pressure of the primary pulley;
- a second valve which controls a secondary pressure of the secondary pulley;
- a third valve which controls the line pressure to be supplied to the first and second valves; and
- a hydraulic-pressure sensor which senses an actual value of the
15 secondary pressure,
- wherein the hydraulic-pressure sensing device comprises the hydraulic-pressure sensor.

9. The method as claimed in claim 7, further comprising:

- 20 determining that the hydraulic-pressure sensing device fails; and
- determining that a first set time elapses after it is determined that engine cranking starts,
- wherein when it is determined that the hydraulic-pressure sensing device fails, and when it is determined that the first set time elapses, the second indicated value of
25 the line pressure is provided to the control circuit.

10. The method as claimed in claim 7, further comprising providing a maximum indicated value of the line pressure to be supplied to an engagement element when it is determined that the actual value of the line pressure is equal to or greater than the

predetermined value after the second indicated value of the line pressure is provided to the control circuit.

11. The method as claimed in claim 10, further comprising determining that a
5 second set time elapses after the second indicated value of the line pressure is provided to the control circuit,

wherein the maximum indicated value of the line pressure is provided when it is determined that the second set time elapses.